

**UNIVERSITI TEKNOLOGI MARA**

**CHEMICAL EXPOSURE AND ITS POTENTIAL HEALTH  
EFFECTS AMONG WORKERS AT A SOLAR CELL  
MANUFACTURING FACTORY**

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**Project paper submitted in partial fulfilment of the requirements for  
the degree of  
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### Declaration by Student

Project entitled "Chemical Exposure and Its Potential Heal Effects among Workers at Solar Cell Manufacturing Factory" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of En Hashim B Ahmad as Project Supervisor and En Nasaruddin B Abd Rahman as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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## ABSTRACT

### Chemical Exposure and Its Potential Health Effects among Workers at a Solar Cell Manufacturing Factory

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**Introduction:** This study is a cross sectional study which involve workers from solar cell manufacturing factory. 60 samples of workers who exposed to the chemicals were taken. **Objective:** To measure the chemical exposure among workers in the solar cell manufacturing factory, to determine the risk rating of the selected chemicals by carry out a chemical health risk assessment on selected chemicals in solar cell manufacturing factor and to identify the effects of the chemical exposure towards workers health **Methodology:** Simple random samplings are used to select the subjects and they have been selected based on inclusive criteria; workers who exposed to chemicals, working average over an entire 8 hours workday and agreed to joint this study. For chemical exposure monitoring; Gil-Air5 was used to the workers who exposed over an eight hour work shift to varying type of chemicals. Besides, a close ended multiple choice was done to identify the health effects from the exposure to the chemicals. **Results:** Based on the reading obtained, the level of chemical exposure in the solar cell manufacturing was below the standard set in OSHA 1994. While from the conducted survey, most of the workers are aware with the chemical used in their workplace/processes. However, based on the statistical analysis it shows that there is a significant difference between working experience and the health effects for dizziness, headache and irritation on nose, eye and throat among the workers with [ $p < 0.05$ ]. **Conclusion:** Although the chemical exposure was below the standard, the company needs to ensure that the exposure will not cause a chronic effect for the constant and long time exposure.

*Keywords: chemical exposure, health effects, solar cell*